Changes in Consumer Spending Patterns 1982 - 1985

Report 7-85

Prepared for:

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PREFACE

In 1982, the Department of Indian Affairs and Northern Development began its socio-economic impact monitoring program in connection with the Norman Wells Oilfield Expansion and Pipeline Project. This program, carried out under the direction of Professor R.M. Bone of the University of Saskatchewan, is, we believe, the first of its kind. Focussing on four Mackenzie Valley communities in the vicinity of the Norman Wells Project, this study was specially designed to allow monitoring of selected social and economic impacts through field surveys done before, during and after construction. The objective of the first field program, carried out in 1982, was acquisition of the baseline data, while the 1983 and 1984 field surveys captured the situation during the active construction phase. The 1985 fieldwork, done for the first time in all four of the survey communities by native organizations, provided the picture for the immediate post-construction period.

Various aspects of the 1982-84 portion of the project were analysed in the 1984 series of reports. This series discusses certain perspectives from the 1985 work, and, as well, deals with changes in selected factors between 1982 and 1985. In a subsequent, and final, series subjects dealt with will include the overall impacts of the Norman Wells Project and a discussion of the monitoring of socio-economic impacts in Canada.

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BACKGROUND TO THE NORMAN WELLS SOCIO-ECONOMIC IMPACT MONITORING PROGRAM

In mid-1979, Esso Resources Canada Ltd. and Interprovincial Pipeline Ltd. initiated discussions with the federal government concerning a major resource development project in the Mackenzie Valley in the Northwest Territories. This project, the Norman Wells Oilfield Expansion and Pipeline Project, was designed to increase production of oil at Norman Wells and carry this increased production through a small diameter pipeline from Norman Wells to Zama, Alberta to connect with the national oil pipeline system. The proposed project was brought to the attention of people in the Mackenzie Valley communities through community information meetings arranged by the companies and designed to inform local residents and businessmen of the potential job and contract opportunities associated with project construction.

During 1980, public hearings were held in northern communities by both the Federal Environmental Assessment and Review Office and by the National Energy Board. These public hearings provided a forum for individuals, native organizations, village councils, government agencies, companies and special interest groups to present their views on the proposed project and the implications of such development for the North and native peoples. The question of involvement of northern residents and businesses in the Norman Wells Project was of major concern during the public hearings, and both the federal and territorial governments indicated that the degree of northern participation in the project would be a key factor in their consideration of whether to approve or reject the Norman Wells Project. On July 30, 1981, the federal government announced its approval, subject to a two-year delay in the commencement of construction to allow government, the companies and northerners time to prepare for their participation in this project.

In early 1982, the Department of Indian Affairs and Northern Development recognized the need to monitor the impacts of the project on the four communities located along the pipeline route. These communities, Norman Wells, Fort Norman, Wrigley and Fort Simpson, were regarded as the ones most likely to receive the bulk of the socio-economic impacts caused by the construction of the Norman Wells Project. All of the socio-economic impacts had potentially positive and negative effects on the communities and local people, and the monitoring program was intended to capture these and evaluate them against the background of pre-construction baseline data on selected indicators.

Carried out by the Department of Geography of the University of Saskatchewan under the direction of Dr. Robert M. Bone, the monitoring program consisted of gathering data from local residents on their household and business characteristics over the course of the construction phase. The framework for this work consisted of three parts: (1) pre-construction phase; (2) construction phase; and (3) a post-construction phase. The field work and data preparation took place from 1982 to 1986. A series of reports based on the data may be obtained from the Department of Indian Affairs and Northern Development.

1. INTRODUCTION

In 1981, Esso Resources and Interprovincial Pipe Line Ltd. received federal approval to construct the Norman Wells Oilfield Expansion and Pipeline Project. One of the concerns raised in the public review hearings related to the leakage of benefits to the south. This potential flow of benefits to southern Canada could take place in three ways: (1) income generated by project related work being spent in the south; (2) business profits generated by project related activities being reinvested in southern Canada; and (3) sale of the oil in southern Canada. In this report, the first of these three types of leakage is more closely examined.

The data for this report was collected by the Norman Wells Socio-Economic Monitoring Program for 1982, 1984 and 1985. Questions from the consumer survey section of the household questionnaire for the communities of Norman Wells, Fort Norman, Wrigley and Fort Simpson form the basis for the report. At the request of the local band councils the questionnaire did not take place in Wrigley or Fort Simpson in 1984.

The first section of this report examines the distribution of consumer spending for each of the study communities and how the spending pattern has changed during the three survey seasons. The next two sections of the report examine two questions related to the general pattern of consumer spending:

1. what specific goods and services are the residents of each study community purchasing in other communities? and,

2. how much of the economic benefits generated by this construction project are being lost to southern Canada in terms of consumer spending?

2. DISTRIBUTION OF CONSUMER SPENDING FOR THE STUDY COMMUNITIES

In the consumer survey section of the household questionnaire, a question was asked on what percentage of the household's total shopping bill was spent in a variety of northern and southern communities. The results to this question reveal the locations where the residents of each community did the majority of their shopping and spent most of their income.

The question on the location of shopping has remained the same in the three household questionnaires; therefore each year's results are highly comparable allowing trends in shopping location to be established. A minor change in the recording of the responses occurred in 1985. The "other communities" category was divided into "other northern communities" and "other southern communities" but this resulted in little change other than making the "other communities" category more explicit (see Tables 1 and 2).

The responses to the location of shopping question for the four study communities are shown in Tables 1 and 2. These figures were obtained by averaging the proportion of total

Table 1 Percentage of Shopping Bill Spent in Various Communities

	Norman Wells			Fort Norman		
	1982	1984	1985	1982	1984	1985
Norman Wells	33.0	39.5	51.4	8.0	6.5	3.3
Fort Norman	1.0	0.5	1.7	81.0	68.5	89.0
Wrigley	0.0	0.0	0.2	0.0	0.0	0.0
Fort Simpson	0.0	0.5	0.5	0.0	0.0	0.1
Fort Franklin	0.0	0.0	0.0	0.0	0.0	0.0
Fort Good Hope	0.0	0.0	0.0	0.0	0.0	0.0
Hay River	6.5	4.0	1.5	0.5	2.0	0.5
Inuvik	1.5	2.0	2.7	1.0	1.5	0.6
Yellowknife	16.0	15.0	15.1	2.0	7.0	1.8
Other Commun (N)	-	-	0.7	-	-	0.0
Calgary	2.5	2.0	0.0	0.5	0.0	0.0
Edmonton	35.5	27.5	18.9	1.5	5.5	1.3
High Level	0.0	0.0	0.0	0.0	0.0	0.0
Peace River	0.0	0.5	0.0	2.0	1.0	0.0
Regina (Mail Order)	1.0	6.0	6.8	1.0	6.0	2.5
Vancouver	1.0	0.5	0.0	1.0	0.0	0.0
Winnipeg	0.0	0.0	0.1	0.0	0.0	0.0
Other Commun (S)	2.0	2.0	0.4	1.5	2.0	0.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Comment: Other Commun (N) was a new category in 1985 and refers to any other northern communities in which consumer spending took place. Other Commun (S) refers to other southern communities.

Table 2 Percentage of Shopping Bill Spent in Various Communities

	Wrigley		Fort Simpson	
	1982	1985	1982	1985
Norman Wells	0.5	1.1	0.0	0.2
Fort Norman	3.5	2.3	0.0	0.0
Wrigley	78.0	73.7	0.0	1.3
Fort Simpson	11.5	15.1	71.0	82.1
Fort Franklin	0.0	0.0	0.0	0.0
Fort Good Hope	1.0	0.0	0.0	0.0
Hay River	1.5	1.3	8.5	4.7
Inuvik	0.0	0.0	0.0	0.0
Yellowknife	2.0	2.3	3.0	2.3
Other Commun (N)	-	0.1	-	0.8
Calgary	0.0	0.0	0.5	0.0
Edmonton	1.0	2.9	9.5	3.7
High Level	0.0	0.0	0.0	0.0
Peace River	0.0	0.0	0.0	0.0
Regina (Mail Order)	0.5	1.2	5.5	4.5
Vancouver	0.0	0.0	1.0	0.0
Winnipeg	0.5	0.0	0.0	0.0
Other Commun (S)	0.0	0.0	1.0	0.4
TOTAL	100.0	100.0	100.0	100.0

Comment: Other Commun (N) was a new category in 1985 and refers to any other northern communities in which consumer spending took place. Other Commun (S) refers to other southern communities.

shopping bill that each household spent in each of these communities. A closer look will now be taken at the results from each community.

2.1 Norman Wells

Norman Wells, the site of the oilfield expansion, received the greatest impact in terms in in-migration and increases in income levels (Bone, 1984, p.11). Because of the large increases in personal income, disposable income available for purchasing goods and services increased. For this reason, changes in shopping patterns at Norman Wells are especially important. The residents of Norman Wells did little shopping in their own community in 1982 with only 33% of the total shopping bill being spent in Norman Wells (Table 1). This situation is likely the result of:

1. there was a large influx of people into Norman Wells as the project began and the new residents in 1982 still had many ties to southern communities and continued to do the majority of their shopping there,
2. there was a great deal of rotational employment in Norman Wells which provided many more opportunities to travel to southern Canada to purchase goods and services for the residents of Norman Wells, and
3. there were relatively few retail stores in Norman Wells in 1982.

These connections to southern Canada are revealed in the 1982 data when Edmonton captured 36% of the shopping bill of the households in Norman Wells.

The shopping pattern of Norman Wells' residents doing more of their shopping in Edmonton than Norman Wells began to shift towards Norman Wells by 1984 and this trend continued in 1985 (Table 1). The residents of Norman Wells increased their shopping in their own community to 40% in 1984 and to over 51% by 1985. This shift is a significant improvement over the three survey seasons and results in a much greater amount of the economic benefits generated by the Norman Wells Project being kept in Norman Wells by 1985.

Figure 1

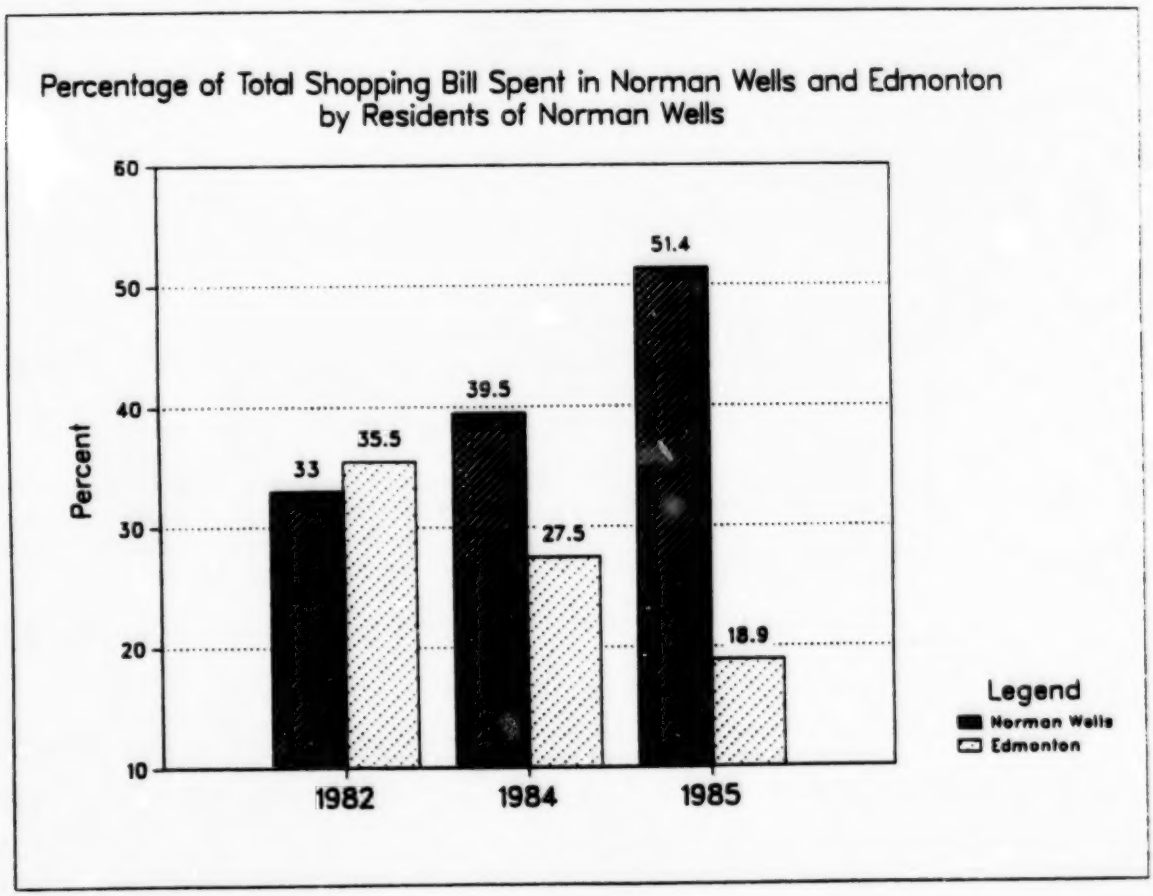


Figure 1 indicates that as Norman Wells gained a larger proportion of the shopping dollar, Edmonton's share declined. Almost all of the increases in shopping in Norman Wells corresponded with declines in shopping in Edmonton. This is revealed by the proportion of the total shopping by Norman Wells' residents accounted for by these two communities. The total proportion of shopping accounted for by Edmonton and Norman Wells remained nearly constant through the three survey seasons at 69% in 1982, 67% in 1984 and 70% in 1985.

There are several reasons for this shift. First, the retail business sector expanded at Norman Wells between 1982 and 1985. Several hotels, beverage rooms, restaurants and other service businesses opened during the construction period, providing the residents of Norman Wells with more variety and greater opportunity to spend their income in Norman Wells. Secondly, the in-migrant households which arrived in Norman Wells near the beginning of the project began to become accustomed to Norman Wells and the higher cost of living in the north. After living in Norman Wells for a while, residents' ties to southern Canada would lessen and this would likely lead to more of the household shopping taking place in Norman Wells. The third factor leading to increased shopping in Norman Wells is that as time passed many of the in-migrants to Norman Wells were families of project employees (Stewart, 1985, p.34). A possible scenario is that after some individuals found jobs, their families moved to Norman

Wells to live with them and the number of trips to southern Canada would be greatly reduced. These three reasons together may account for the shift towards more shopping in Norman Wells and less in Edmonton.

There are other interesting aspects to the spatial pattern for shopping by Norman Wells residents. Yellowknife has consistently captured approximately 15% of the shopping expenditures of the residents of Norman Wells (Table 1). The reason for the popularity of Yellowknife relates to its role as the territorial center and the larger number of businesses located there. As well, all government officials in Norman Wells travel to Yellowknife frequently allowing for some shopping to take place.

Although Hay River is the next most important place for shopping by residents of Norman Wells, Hay River's share of consumer spending has declined from 7% in 1982 to 2% in 1985. The reason for the decline likely relates to Hay River's role as a transportation center, i.e., many of the families moving to Norman Wells in 1982 would have driven to Hay River, then transferred their household goods to Norman Wells by barge. Hay River would be the last opportunity for these families to purchase items before moving into Norman Wells. Since in-migration to Norman Wells has been greatly reduced with the completion of the Norman Wells Project in 1985, Hay River's share

of the shopping bill has also been reduced.

2.2 Fort Norman

The residents of Fort Norman did the majority of their shopping in their own community (Table 1). Approximately 80% of Fort Norman's shopping took place in Fort Norman in 1982, 1984 and 1985. Since the Bay store is the only retail outlet in Fort Norman, its importance to the community is considerable. This is a substantially different situation to that in Norman Wells where half or less of the resident's shopping took place in that community. Another factor in Fort Norman's spending pattern is that on average over 90% of the total shopping bill is spent in northern Canada. Again, this is quite a different situation from that in Norman Wells where much of the spending outside of Norman Wells is in southern Canada.

One anomaly in the three survey years is the significant decline in the proportion of shopping done in Fort Norman in 1984. While the 1982 figure was 81% and the 1985 figure was 89%, the 1984 value was a much lower 69% (Table 1). There are two possible explanations for this shift. Firstly, the residents of Fort Norman did do more shopping in other communities such as Yellowknife and Edmonton in 1984, possibly because the residents of Fort Norman who worked on the project had increased opportunity to travel to these other communities. The second

explanation relates to the time the survey took place in Fort Norman in 1984. When the 1984 survey was completed in Fort Norman several native households were on the land and thus didn't complete the questionnaire. If you assume that these traditional households did most of their shopping in Fort Norman, this would explain the lower figure in 1984.

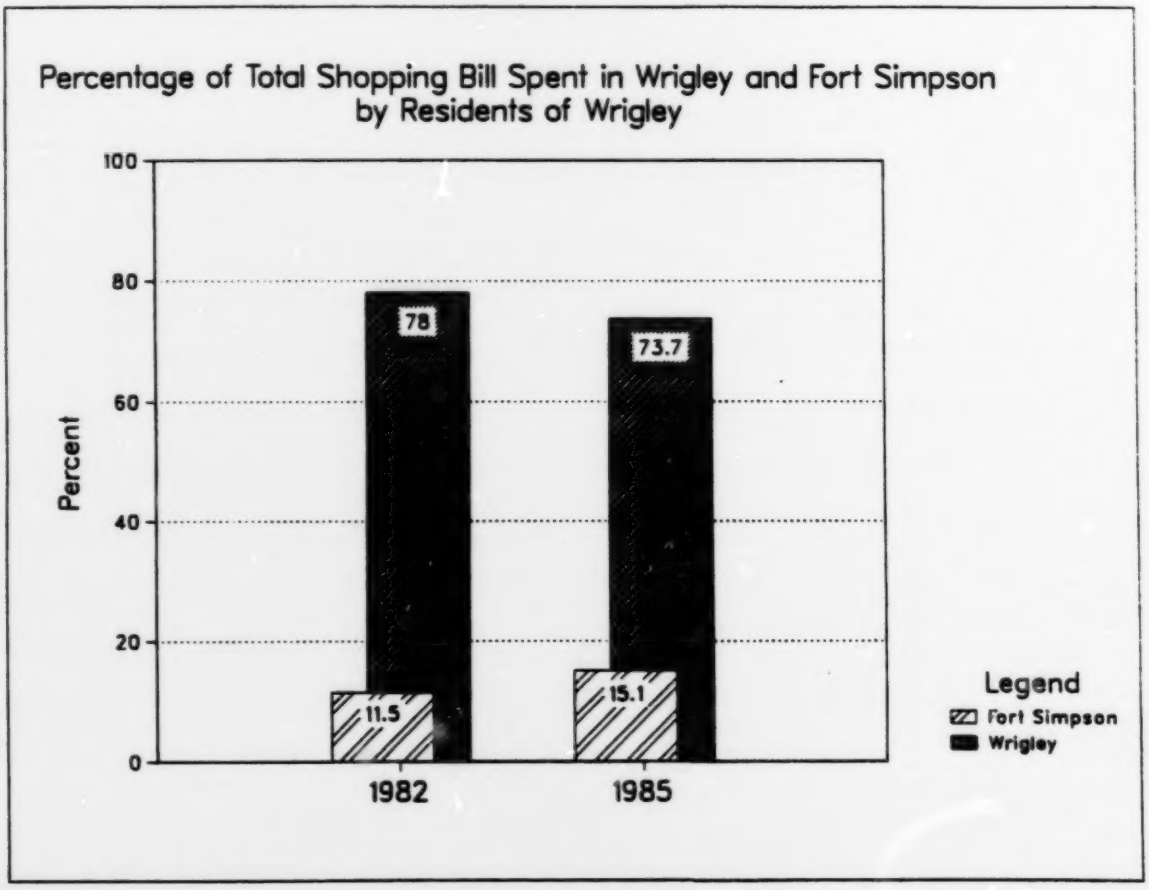
Throughout the three survey years, Norman Wells ranked as one of the most important "other" locations for shopping for the residents of Fort Norman (Table 1). This importance is a reflection of the emerging role of Norman Wells as a regional center and its proximity to Fort Norman. Yellowknife, the next level in the urban hierarchy, was also of some importance. The two most important communities in southern Canada for shopping by Fort Norman residents are Edmonton and the mail order service through Regina.

2.3 Wrigley

The responses to the Norman Wells Socio-Economic Monitoring questionnaire were intended to measure the impact of the Norman Wells Project. However, the community of Wrigley was also impacted by another project, namely the extension of the highway to Wrigley and the impact of this project on shopping patterns is revealed in the data (Table 2). The completion of the highway into Wrigley was done by the Deh Cho Corporation, which is the

band owned development corporation of Fort Simpson. This company hired many residents of Fort Simpson and Wrigley to do the work. The result of this hiring pattern and the completion of the highway may be to increase contact between the two communities. With data available for 1982 and 1985, the impact on interaction in terms of consumer spending is indicated (Figure 2).

Figure 2



This figure reveals that there was a small shift in shopping away

from Wrigley and towards Fort Simpson from 1982 to 1985 by the residents of Wrigley. This shift involved a drop in consumer spending in Wrigley of 4.3 percentage points and a subsequent increase in spending in Fort Simpson of 3.6 percentage points.

The other major point of note about the shopping patterns in Wrigley is that like Fort Norman, an extremely high proportion of the spending by residents of Wrigley takes place in northern Canada. Northern Canada received 98% of the spending by Wrigley residents in 1982 and 96% in 1985 (Table 2).

2.4 Fort Simpson

Fort Simpson residents, like the residents of the other two predominantly native communities, do the majority of their shopping in their own community. In 1982, an average of 71% of the total shopping bill was spent in Fort Simpson and in 1985, 82% of the consumer spending was done in Fort Simpson (Table 2). The relatively small increase in shopping in Fort Simpson between 1982 and 1985 was coupled with a decline in spending in Edmonton by residents of Fort Simpson, similar to the situation in Norman Wells.

There are three other major centers outside of Fort Simpson in which the residents of Fort Simpson shop. First, Hay River is of some importance as a center for shopping. Hay River captured

8.5% in 1982 and 4.7% in 1985 of the total shopping bill of the residents of Fort Simpson. The second major center is Yellowknife. Yellowknife's role as a center for territorial activity is certainly revealed in this data set as each of the four communities has consistently done a portion of their shopping in Yellowknife. The final major community for consumer spending is the mail order service in Regina. Fort Simpson residents spent 5.5% of their shopping bill in Regina in 1982 and 4.5% in 1985 (Table 2).

As a final note, the residents of Fort Simpson do most of their consumer spending in northern Canada. Over 82% in 1982 and over 91% in 1985 of all shopping by Fort Simpson residents was done in northern Canada which is a similar situation to that of Fort Norman and Wrigley.

3. LOCATION FOR PURCHASING SPECIFIC GOODS AND SERVICES

The previous section indicates that the residents of each of the study communities do varying amounts of consumer spending outside of their own community with Norman Wells residents spending by far the most in other communities. The next question is, what goods and services are the residents of the study communities purchasing in other communities? In this section this question is examined.

In the consumer survey of the household questionnaire, a

Table 3 Location for Purchasing Goods and Services
Norman Wells 1982 - 1985

	1982			1984			1985		
	Norman Wells	Other North	South	Norman Wells	Other North	South	Norman Wells	Other North	South
Health Services	46.0	9.9	44.1	57.1	13.4	29.5	42.0	11.8	46.2
Banking	84.0	9.3	6.7	81.9	6.0	12.1	82.9	7.1	10.0
Clothing	15.5	4.2	80.3	9.2	5.6	85.2	18.8	2.3	78.9
Groceries	38.0	32.4	29.6	60.9	23.3	15.8	52.2	28.7	19.1
Liquor	98.6	0.0	1.4	99.1	0.0	0.9	100.0	0.0	0.0
Durable Goods	45.3	11.2	43.5	51.4	10.8	37.8	57.6	3.8	38.6
Hunting Equipment	72.9	7.2	19.9	61.3	11.0	27.7	62.6	10.3	27.1

Table 4 Location for Purchasing Goods and Services
Fort Norman 1982 - 1985

	1982			1984			1985		
	Fort Norman	Other North	South	Fort Norman	Other North	South	Fort Norman	Other North	South
Health Services	86.8	6.6	6.6	93.3	5.6	1.1	95.4	2.3	2.3
Banking	0.0	97.5	2.5	5.0	95.0	0.0	2.0	98.0	0.0
Clothing	80.9	2.1	17.0	77.4	3.2	19.4	93.1	0.0	6.8
Groceries	91.7	0.0	8.3	91.2	5.9	2.9	100.0	0.0	0.0
Liquor	0.0	94.0	6.0	0.0	100.0	0.0	0.0	100.0	0.0
Durable Goods	69.4	25.5	5.1	53.1	36.6	10.3	79.0	16.6	4.4
Hunting Equipment	92.6	5.8	1.6	95.6	1.5	2.9	98.2	1.2	0.6

Table 5 Location for Purchasing Goods and Services
Wrigley 1982 & 1985

	1982			1985		
	Wrigley	Other North	South	Wrigley	Other North	South
Health Services	96.3	3.7	0.0	98.8	1.2	0.0
Banking	28.8	71.2	0.0	4.0	92.0	4.0
Clothing	77.8	11.1	11.1	90.0	6.7	3.3
Groceries	95.2	4.8	0.0	96.8	0.0	3.2
Liquor	0.0	100.0	0.0	8.3	91.7	0.0
Durable Goods	89.2	2.5	8.3	75.6	24.4	0.0
Hunting Equipment	92.7	7.3	0.0	86.9	11.9	1.2

Table 6 Location for Purchasing Goods and Services
Fort Simpson 1982 & 1985

	1982			1985		
	Fort Simpson	Other North	South	Fort Simpson	Other North	South
Health Services	83.2	10.2	6.6	85.0	8.3	6.7
Banking	96.8	2.7	0.5	98.9	1.1	0.0
Clothing	56.4	5.4	38.2	83.3	2.8	13.9
Groceries	89.7	2.7	7.6	98.4	1.1	0.5
Liquor	94.3	5.7	0.0	95.8	3.6	0.6
Durable Goods	64.5	15.1	20.4	78.9	9.7	11.4
Hunting Equipment	72.7	17.1	10.2	93.4	3.3	3.3

question was asked on the major location for purchasing a variety of goods and services and the responses to this question form the basis for this section. The responses are provided in Tables 3 to 6 for each of the four study communities. The seven major areas of consumer goods and services are as follows:

1. Health Services
2. Banking
3. Clothing
4. Groceries
5. Liquor
6. Durable Goods
7. Hunting Equipment

These seven categories are a collapsed version of the fifteen original goods and services provided on the questionnaire. The health services category is a combination of where each household obtains the services of a doctor, a dentist and an optician. The durable goods category includes where each household purchases appliances, furniture, hardware, automobiles or lumber. Finally, the hunting equipment category includes hunting supplies (e.g. traps, rifles, etc.), canoes, boats and snowmobiles. In Tables 3 to 6 the percentage of households which purchase each good or service in: (1) the study community, (2) other northern communities, or (3) southern Canada is provided.

3.1 General Pattern

Several of the specific goods and services reveal patterns which would be expected given the business infrastructure of each of the four study communities. These items may be summarized:

1. residents of the three predominantly native communities receive almost all of their health care in their own community. Residents of Norman Wells receive less than half of their health care in Norman Wells with many travelling to southern Canada;

2. almost all residents of Norman Wells and Fort Simpson do their banking and purchase liquor in their own community. The residents of Fort Norman and Wrigley, generally travel to these two larger communities to obtain these items;

3. the location for purchasing hunting equipment is similar to the pattern seen for many of the goods and services with the predominantly native communities purchasing almost entirely in their own community while many residents of Norman Wells purchase these items in southern Canada; and

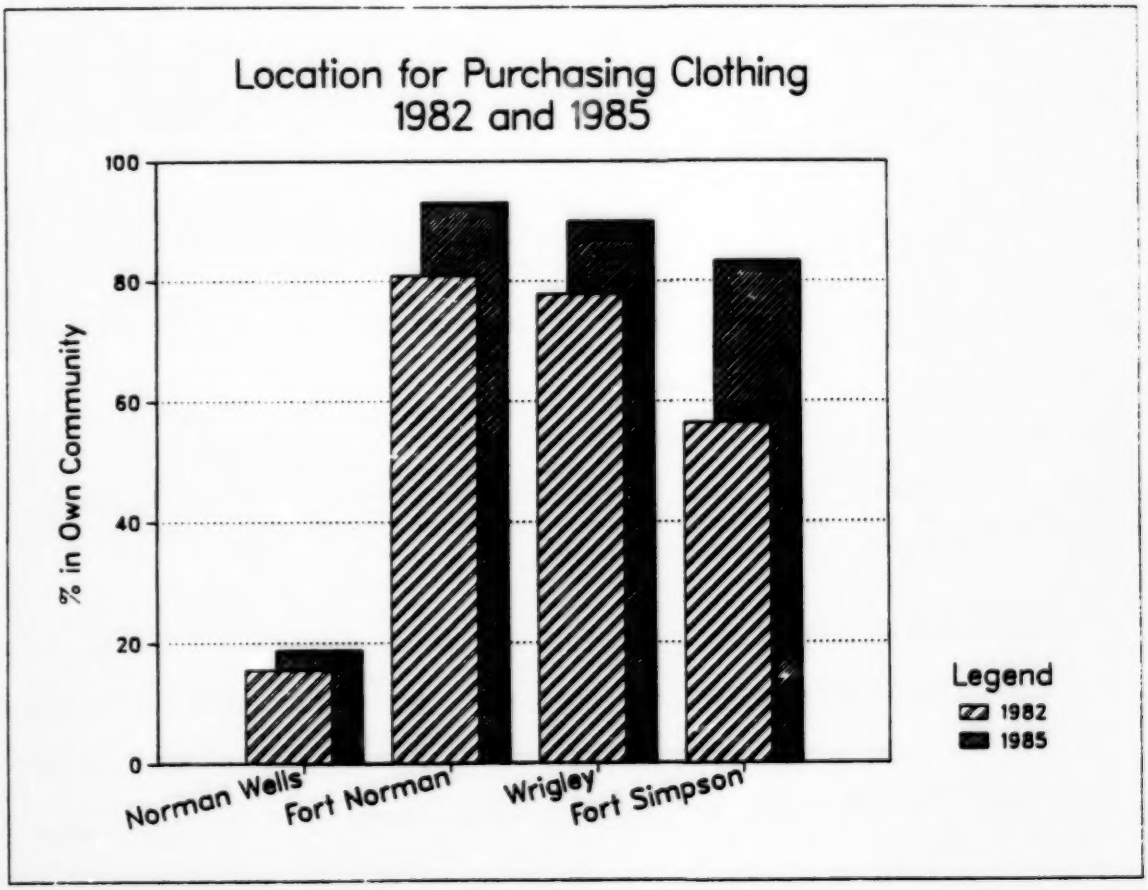
4. many residents in all four communities purchase durable goods outside of their own community. In Wrigley and Fort Norman residents often purchase these items from other northern communities, while in Norman Wells and Fort Simpson the residents purchase durable goods in southern Canada.

Consumer spending on clothing and groceries more clearly accounts for the differences in overall shopping patterns between the communities which were noted in the previous section and for this reason these items deserve a closer look.

3.2 Clothing

Consumer spending on clothing is one of the most important and consistent expenses for a household. Figure 3 indicates the vast differences between the three native communities and Norman Wells.

Figure 3



Consumer spending on clothing is one of the major areas in which

spending outside of Norman Wells took place by the residents of Norman Wells. Less than 20% of the households did their shopping for clothing in Norman Wells in each of the three survey seasons. The other 80% of the households shopped for clothing in southern Canada. Over 80% of the residents of Wrigley and Fort Norman do their shopping for clothing in their own community (Figure 3). With one main retail store in each of these communities, the importance of the Co-Op to Wrigley and the Bay to Fort Norman is illustrated. In Fort Simpson, only 56% of the residents did their shopping for clothing in Fort Simpson in 1982 (Table 6). By 1985, over 80% identified Fort Simpson as their primary community for purchasing clothing.

When the location for purchasing the specific goods and services in the south is broken down to the community level, the importance of Sear's mail order service in Regina for purchasing clothing is revealed. For example, in each of the four study communities Regina finished higher as a location for purchasing clothing than for any of the other goods or services.

3.3 Groceries

The consumer spending pattern for groceries is similar to that for clothing. Over 90% of the households in the three predominantly native communities purchase their groceries in their own community. Again, this reveals the importance of the

Bay and Co-Op stores to these communities.

In Norman Wells, a shift occurred in the location for purchasing groceries. In 1982, only 38% of the households purchased groceries in Norman Wells. Over 32% of the residents of Norman Wells purchased groceries in other northern communities and the other 30% purchased the household's groceries in southern Canada (Table 3). Shopping for groceries is the one consumer activity which displayed a wide variety of locations. By 1985, over 52% of the households in Norman Wells purchased their groceries in Norman Wells (Table 3). This increase of 14 percentage points in part explains the overall increase in consumer spending in Norman Wells from 1982 to 1985. The proportion of residents purchasing groceries in other northern communities, namely Yellowknife, did not significantly change from 1982 to 1985 while the drop in the percentage of Norman Wells households shopping for groceries in southern Canada accounts for most of the increase grocery shopping in Norman Wells.

4. CONSUMER SPENDING PATTERNS AND THE PROBLEM OF LEAKAGES

Leakage refers to the flow of capital and wages from an underdeveloped region back to a developed or core region. As noted in the introduction to this report, one of the methods by which leakage can take place is through consumer spending in the core region. When an industrial development takes place in a

relatively underdeveloped region, one of the goals is that the benefits of the project will be used to further develop the region. One way this occurs is through the secondary or spin-off effects of the industrial development. Employment opportunities in support businesses for the main industry and in the retail sector will further encourage economic growth. The optimum situation would be for all business profits and income generated from the development project to be reinvested in the developing region. In northern Canada, a significant proportion of the profits and wages generated by a development project flows to southern Canada. The degree to which capital leaks south is the focus of considerable debate. The amount of the income generated by the Norman Wells Project flowing to southern Canada through consumer spending is examined in this section.

In the 1985 household questionnaire, the heads of the households were asked to estimate the household's weekly shopping bill. The question read as follows:

Estimate your household's weekly shopping bill:

less than $51 __

$51 - $100 __

$101 - $200 __

$201 - $500 __

more than $500 __

This response was expected to include all items that the

household would purchase. Categories were used because it was felt that the exact value for weekly spending would be difficult to estimate. The distribution of responses for the four study communities is found in Table 7 and there is a wide variance of amounts spent by households on a weekly basis.

Table 7 Weekly Shopping Bill for Households in the Four Study Communities

	Norman Wells	Fort Norman	Wrigley	Fort Simpson
less than $51	12	2	1	17
$51 - $100	27	9	8	73
$101 - $200	34	24	14	68
$201 - $500	56	22	6	24
more than $500	11	3	2	6
n =	140	60	31	188

In order to compute an annual dollar value for the total amount spent by each household, the mid-point of each class was multiplied by 52. For example, the households falling in the less than $51 spending class would have a yearly spending total of:

class mid-point	X	weeks/year	=	annual consumer spending
$25/week	X	52 weeks	=	$1300

By using the class mid-point it is assumed that the observations in each category are evenly distributed throughout the category. For the openended category "more than $500", a value of $501 was

used. The justification for this was that it was felt that the few households falling in this category would not be much higher than the $500 value. Also, it was preferred to underestimate the total than to overestimate it for reasons which will be discussed later.

The amount of money leaking from the developing region into southern Canada can than be computed by:

$$\text{Leakage (\$)} = \sum [(x_1)(x_2)]$$

where: x_1 is the amount spent by the household over a year;

x_2 is the percentage of consumer spending done in southern Canada.

This summation is for all household values in the region. Households at different levels of income and spending may do varying amounts of shopping in southern Canada. However, this potential problem is avoided since the data is collected at the household level and leakage values are computed for each household, then are summed. Since some households either were missed or refused to take part in the survey, it is necessary to re-compute the summation total to include all the households in each community. This procedure assumes that the missed households have similar consumer spending patterns as the rest of the community.

Table 8 contains the leakage figures for each of the study communities for 1985 as well as the regional total.

Table 8 Amount of Leakage to Southern Canada from the Four Study Communities, 1985

	Total Amount Spent by Households	Total Amount Leaked to Southern Canada
Norman Wells	$2,944,566	$786,296
Fort Norman	$882,105	$30,507
Wrigley	$341,984	$20,504
Fort Simpson	$2,244,770	$199,116
TOTAL FOR REGION	$6,413,425	$1,036,423

The total leakage for the region was approximately $1.04 million for 1985 using the above computation method. It is important to note that this is the leakage from consumer spending and does not include leakage through business profits and spending or through the sale of the oil in southern markets. Table 8 indicates that much of the leakage occurs from Norman Wells with some from Fort Simpson but little from either Wrigley or Fort Norman. If it is assumed that similar spending patterns occurred in the four communities during the entire construction period of the project then as much as $5.2 million may have leaked to southern Canada from 1981 to 1985. This amount of leakage is extremely significant and had it been reinvested in the north, could have created more jobs in northern communities.

However, this five year total for the region is underestimated for several reasons. First, as was noted earlier

the open-ended category for weekly spending was assigned the value of the lower limit of the category. It is impossible to know how much households in this category actually spent, but it is certain that it was higher than the lower limit of the category. Second, in previous sections it has been shown to be incorrect to assume stable spending patterns for the communities from 1981 to 1985. For example, it was indicated that consumer spending in the north by residents of Norman Wells rose dramatically from 58% to 74% between 1982 and 1985 (Table 1). The original figure of $1.04 million per year for the region is based on 1985 spending patterns and is significantly lower than the leakages which would have occurred in the earlier years of the Norman Wells Project. Thirdly, it is difficult to assume that the dollar value of consumer spending would be similar throughout the years of the project. A case may be made to suggest it was higher in 1982, 1983 and 1984 than in 1985. At the height of the construction period of the project, incomes were higher so that more spending likely took place. Also, early in the project more households were moving to Norman Wells which would also result in higher spending. The result of these three factors is that the five year total is likely underestimated; however this figure does establish that **at least $5.2 million** leaked from the region to southern Canada through consumer spending during the Norman Wells Project.

The final question is how could this loss of $5.2 million

have been avoided? It is probably impossible to completely avoid some leakage from a developing region back to a core region. These small communities quite simply do not have the business infrastructure to capture the entire consumer spending of all households. Items such as appliances, furniture or automobiles are less expensive in southern Canada and it would be near impossible for these items to be carried by northern businesses with such small markets. However, from the previous section it was noted that there was extremely low consumer spending in Norman Wells for items such as clothing and food suggesting that some of the leakage could have been avoided.

As a final note to this section, it must be reiterated that the $5.2 million leakage figure during the construction of the Norman Wells Project is only for consumer spending. The leakage from business profits and spending and the sale of the oil in the south are not included in this figure. If these were, the total leakage would be substantially higher.

5. CONCLUSIONS

This report has examined consumer spending patterns and how they have changed for each of the four study communities during the construction of the Norman Wells Project. There are several conclusions which may be drawn from the analysis from this report. These conclusions are:

1. consumer spending in Norman Wells rose significantly during the construction of the Norman Wells Project. Households in Norman Wells increased spending in their own community from 33% of their total shopping bill in 1982 to 51% in 1985;

2. consumer spending in their own community remained consistently high in the communities of Fort Norman, Wrigley and Fort Simpson throughout the Norman Wells Project;

3. as households in Norman Wells increased their spending in their own community, Edmonton significantly declined in importance as a location for consumer spending;

4. Fort Simpson increased slightly in importance as a location for shopping by residents of Wrigley which is possibly a result of the construction to extend the highway into Wrigley;

5. durable items were the goods least purchased in their own community for the residents of Fort Norman, Wrigley and Fort Simpson. In Norman Wells, shopping for clothing and groceries were the most significant in terms of spending outside of Norman Wells; and

6. leakage through consumer spending is estimated at $1.04 million for the region for 1985. Leakage through consumer spending was approximately $5.2 million during the construction of the Norman Wells Project.

6. REFERENCES

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